

CLAIMS

1 1. A lateral flow immunoassay device for identifying the presence of tissue from
2 a particular species of billfish in a test sample, the device comprising a substrate onto which a
3 billfish specific antigen-containing sample has been immobilized.

1 2. The immunoassay device of claim 1, wherein the substrate comprises a
2 nitrocellulose membrane.

1 3. The immunoassay device of claim 2, wherein the substrate comprises a
2 plastic-backed nitrocellulose membrane.

1 4. The immunoassay device of claim 1, wherein the substrate has a first end and
2 a second end, the first end having thereon the immobilized billfish-specific antigen-
3 containing sample, and the second end being adapted to receive a solution comprising an
4 antibody that specifically binds the billfish-specific antigen.

1 5. The immunoassay device of claim 4, wherein the solution further comprises at
2 least a portion of the test sample.

1 6. The immunoassay device of claim 1, wherein the billfish-specific antigen is a
2 billfish serum albumin.

1 7. The immunoassay device of claim 6, wherein the billfish serum albumin
2 comprisess sailfish serum albumin.

1 8. The immunoassay device of claim 6, wherein the billfish serum albumin
2 comprises blue marlin serum albumin.

1 9. The immunoassay device of claim 6, wherein the billfish serum albumin
2 comprises white marlin serum albumin.

1 10. The immunoassay device of claim 4, wherein the solution is applied on the
2 substrate.

1 11. The immunoassay device of claim 10, wherein at least a portion of the
2 antibody is specifically bound to the immobilized billfish specific antigen.

1 12. The immunoassay device of claim 10, wherein the antibody is detectably
2 labeled.

1 13. The immunoassay device of claim 12, wherein the detectably labeled antibody
2 is conjugated to a gold particle.

1 14. The immunoassay device of claim 12, wherein the gold particle has a diameter
2 of between 20-40 nm.

1 15. The immunoassay device of claim 1, wherein a non-billfish specific antigen
2 has been immobilized on the substrate.

1 16. A kit for identifying the presence of tissue from a particular species of billfish
2 in a test sample, the kit comprising:
3 a lateral flow immunoassay device comprising a substrate onto which a
4 billfish- specific antigen-containing sample has been immobilized; and
5 a solution comprising an antibody that specifically binds the billfish-specific
6 antigen.

1 17. The kit of claim 16, wherein the billfish specific antigen is a billfish serum
2 albumin.

1 18. The kit of claim 17, wherein the billfish serum albumin is selected from the
2 group consisting of sailfish serum albumin; blue marlin serum albumin; and white marlin
3 serum albumin.

1 19. The kit of claim 16, wherein the antibody is detectably labeled.

1 20. The kit of claim 19, wherein the detectably labeled antibody is conjugated to a
2 gold particle.

1 21. The kit of claim 20, wherein the gold particle has a diameter of between 20-40
2 nm.

1 22. The kit of claim 16, wherein a non-billfish specific antigen has been
2 immobilized on the substrate.

1 23. A method for identifying the presence of tissue from a particular species of
2 billfish in a test sample, the method comprising the steps of:

3 (A) providing the test sample and a substrate onto which a billfish-specific
4 antigen-containing sample has been immobilized;

5 (B) preparing an antibody-test sample mixture by mixing the test sample
6 with an antibody that specifically binds the billfish specific antigen; and

7 (C) applying the antibody-test sample mixture to the substrate.

1 24. The method of claim 23, wherein the billfish-specific antigen is a billfish
2 serum albumin.

3 25. The method of claim 24, wherein the billfish serum albumin is selected from
4 the group consisting of sailfish serum albumin; blue marlin serum albumin; and white marlin
5 serum albumin.

6 26. The method of claim 23, wherein the antibody is detectably labeled.

1 27. The method of claim 26, wherein the detectably labeled antibody is
2 conjugated to a gold particle.

1 28. The method of claim 23, wherein a non-billfish specific antigen has been
2 immobilized on the substrate.

1 29. A method for identifying the presence of tissue from a particular species of
2 billfish in a test sample, the method comprising the steps of:
3 (A) providing the test sample and a substrate;
4 (B) immobilizing at least a portion of the test sample on the substrate;
5 (C) providing an antibody that specifically binds a billfish-specific antigen;
6 and
7 (D) applying the antibody to the substrate.

1 30. The method of claim 29, wherein the billfish-specific antigen is a billfish
2 serum albumin.

1 31. The method of claim 30, wherein the billfish serum albumin is selected from
2 the group consisting of sailfish serum albumin; blue marlin serum albumin; and white marlin
3 serum albumin.

1 32. The method of claim 29, wherein the antibody is detectably labeled.

1 33. The method of claim 32, wherein the detectably labeled antibody is
2 conjugated to a gold particle.

1 34. The method of claim 29, wherein a non-billfish specific antigen has been
2 immobilized on the substrate.